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Kathryn Rhoads* (kerhoads@uta.edu), **James A. Mendoza Epperson** and **R. Cavender Campbell**. *The Role of Justifying in Entry-Level Undergraduates' Mathematical Problem Solving*. Preliminary report.

The practice of justifying solutions or solution methods is central in mathematical problem solving (MPS). In the MPS Item Development Project, we created Likert-style survey items which capture five domains of MPS, including the domain of justifying. Campbell (2016) reported survey results from Fall 2015, indicating that Calculus I students scored significantly higher in justifying than College Algebra students ($p < 0.05$), and in both courses, passing students scored significantly higher in justifying than non-passing students ($p < 0.05$). In this presentation, we draw on data from refined and revised surveys administered in 2016 to over 640 students enrolled in College Algebra and over 500 students enrolled in Calculus I at a large, urban university in the southwest United States, as well as individual, task-based interviews with over 20 students in these courses. We explore justification in undergraduate students' MPS through qualitative analysis of interview data, and we further investigate the relationship between justification and course success through quantitative analysis of survey data. The results suggest possible directions for MPS teaching practice in entry-level undergraduate courses. (Received September 20, 2016)